

REMARKS

Claims 1-6 are pending and under consideration in the above-identified application.

In the Office Action dated August 10, 2009, the Examiner rejected claims 1-6.

With this Amendment, claims 1 and 4 were amended. No new matter has been introduced as a result of the amendments. Support for the Amendment can be found on at least page 24 of the specification and in figure 3.

I. 35 U.S.C. § 103 Obviousness Rejection of Claims

Claims 1-3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sato et al. (U.S. Patent No. 6,710,986) in view of Gill (U.S. Patent No. 6,052,263). Applicant respectfully traverses this rejection.

The claims require a magnetoresistive device having an intermediate layer, a first fixed magnetization layer located directly below and in contact with the intermediate layer, a second fixed magnetization layer located below the intermediate layer, and a non-magnetic conductive layer in-between the first and second fixed magnetization layers. The first fixed magnetization layer is a crystalline ferromagnetic material and the second fixed magnetization layer is coupled to an antiferromagnetic layer.

Sato et al. teaches a structure having an intermediate layer in-between a free magnetization layer and a fixed magnetization layer. Sato et al., Fig. 2. However, Sato et al. does not teach or even fairly suggest the first and second fixed magnetization layer as required by the claims. As such, Sato et al. fails to teach or even fairly suggest all the requirements of the claims.

Gill et al. teaches an electrode structure (404) in Figure 4 having multiple layers. However the layers taught by Gill et al. are not the same as the layers required by the claims.

Specifically, Gill et al. does not teach or even fairly suggest a first fixed magnetization layer that is a crystalline ferromagnetic material located directly below and in contact with an intermediate layer as required by the claims. Additionally, Gill et al. fails to teach or even fairly suggest a second fixed magnetization layer that is coupled to an antiferromagnetic layer.

As such, taken either singularly or in combination with each other, the above cited references fail to teach or even fairly suggest all the required elements of the claims. Accordingly, independent claim 1 is patentable over the above cited references as are dependent claims 2 and 3 for at least the same reasons. Accordingly, Applicant respectfully requests that the above rejection be withdrawn.

Claims 4-6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Miyatke et al. (U.S. Patent No. 6,842,361) in view of Sato et al. and Gill et al. Applicant respectfully traverses this rejection.

Miyatke et al. teaches a magnetic tunnel junction that includes a tunnel barrier (34) in-between a free ferromagnetic layer (32) and a pinned ferromagnetic layer (36). Miyatke et al., Fig. 3. The pinned ferromagnetic layer is on top of a metal line layer (MX). However, similar to Sato et al., Miyatke et al. also fails to teach or even fairly suggest a first and second fixed magnetization layer as required by the claims.

As discussed above, Gill et al. fails to teach the same layered structure as required by the claims. Accordingly, taken either singularly or in combination with each other, the above cited references fail to teach or even fairly suggest all the required elements of the claims. Thus, independent claim 4 is patentable over the cited reference as are dependent claims 5-6 for at least the same reasons. As such, Applicant respectfully requests that the above rejections be withdrawn.

II. Conclusion

In view of the above amendments and remarks, Applicant submits that all claims are clearly allowable over the cited prior art, and respectfully requests early and favorable notification to that effect.

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